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Attorney Docket # 4136-212

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Francis Edward FISHER et al.

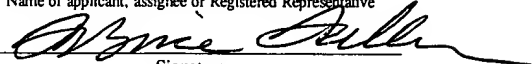
Serial No.: 09/939,356

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For: Heat Sink

Examiner: Leo, L. R.
Group Art: 3743

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REPLY BRIEF

SIR:

This reply brief is being filed in triplicate to address new points raised in the Examiner's Answer mailed on April 13, 2004.

At the outset, it will be noted that claims 1, 3-5 and 8 were finally rejected as anticipated by any one of five references. In the Examiner's Answer, the rejections citing Bolleson, Villaume, and Katsui were withdrawn in view of Appellants' reliance on the dictionary definition of "land" presented in the Appeal Brief. However, the rejections under 35 U.S.C. §102 citing Takahashi and Pavlovic were maintained, because the arguments with respect to these references were not considered persuasive.

With respect to the rejection citing Takahashi U.S. 5,528,456, the Examiner maintains that circuit chips 1 are "mechanically fixed" to the heat transfer foil 9 (or the plate of Figure 4), and have planar surfaces which are "contiguous" with the heat transfer foil. Takahashi discloses a layer of solder 10 as the sole and exclusive means of attaching the chips 1 to the foil 10. In supporting his position, the Examiner refers to several U.S. patents which define the term "mechanically fixed" as including solder or glue. However, these patents constitute *extrinsic* evidence which may not properly be considered in determining the meaning of words in a claim. The words used in a claim are interpreted in light of the *intrinsic* evidence of record, including the written description, the drawings, and the prosecution history. Teleflex, Inc. v. Ficosa N. Am. Corp., 63 USPQ2d 1374 (Fed. Cir. 2002).

In the present case it is clear that the term "mechanically fixed" does not include solder, because Appellants teach away from the use of solder to fix the solderable elements to the aluminum heat sink body. Notwithstanding what extrinsic evidence may teach about soldering aluminum, Appellants teach that aluminum is not readily soldered due to its oxide layer. See page 4, lines 11-12. If aluminum could be readily soldered, there would be no need to mechanically fix solderable elements to the heat sink body in the manner taught by Appellants in the present application.

The Examiner also maintains that "contiguous" means "nearby or neighboring", because the dictionary proffers this definition as an alternative to the primary definition, which is "sharing an edge or boundary; touching". While the dictionary is considered to be intrinsic evidence, the Examiner has ignored other intrinsic evidence of record, to wit, the written description, the drawings, and the prosecution history, which contain nothing whatsoever to suggest that "contiguous" means anything other than direct, intimate, touching contact between the solderable

elements and the heat sink body. See in particular page 11, lines 10-13, which refers to "one surface providing a contiguous contact with the solderable element to permit a thermal conductivity path to be present in the complete assembly". "To ascertain the meaning of claims, we consider three sources: The claims, the specification and the prosecution history." Markman v. Westview Instruments, Inc., 52 F.3d 967 (Fed. Cir. 1995), *aff'd*, 517 U.S. 370 (1996), quoting, Unique Concepts, Inc. v. Brown, 939 F.2d 1558, 1561 (Fed. Cir. 1991). "Claims must be read in view of the specification of which they are a part," Markman, *supra*, citing, Autogiro Co. of America v. United States, 384 F.2d 391, 397 (Ct. Cl. 1967), and in view of the patent's prosecution history. Markman, 52 F.3d at 980, citing Graham v. John Deere Co., 383 U.S. 1, 33 (1966).

With respect to the rejection citing Pavlovic U.S. 6,055,158, the Examiner maintains that the term "mechanically fixed" is broad enough to include the layer of thermally conductive adhesive between the foot 46 and electronic component 18. However, there is nothing in Appellants' description to suggest such a broad definition. All of Appellants' examples relate to providing an interference fit, e.g. by boring, cutting or punching of suitable sockets. See page 9, lines 16-17. Indeed, Appellants teach away from the use of any adhesive. If adhesive were used between the solderable elements and the heat sink body, the integrity of the adhesive bond would be destroyed by heat in a subsequent soldering operation during which the solderable elements are soldered to a printed circuit board.

With respect to the word "contiguous", the definition asserted by the Examiner reads the word right out of Appellants' claims. As pointed out above, there is nothing in Appellants' description or drawings to suggest that "contiguous" means anything other than direct and intimate contact.

Turning now to the rejection of claims 9 and 10, the Examiner turns to extrinsic evidence to support his position that the semiconductors 1 of Takahashi and the electronic components 18 of Pavlovic may have many alternative forms. More particularly, the Examiner refers to U.S. patents which show IC chips bonded to metal tabs which are mechanically fastened to heat sink bodies. The relevance of this extrinsic evidence is difficult for Appellants to see, because the cited patents in no way suggest that the IC chips of Takahashi and the electronic components of Pavlovic can be fixed to a heat sink body by means of sockets and projections in an interference fit. On the contrary, they underscore Appellants' position that the sockets and projections disclosed by Pei et al. U.S. 6,230,789 would not be used in IC chips. That is, the only way to fasten an IC chip to an aluminum heat sink using a socket/projection arrangement is to first mount the IC chip on a metal support tab. Otherwise, the forces involved in providing an interference fit would destroy the IC chip. Destruction of the chips would inherently defeat the teachings of the primary references. There is nothing in Pei et al. to suggest the use of sockets and projections to mechanically fix an IC chip to a heat sink.

To the extent that the Examiner may be using extrinsic evidence to define the IC chips of Takahashi and Pavlovic to include chips bonded to tabs, this runs afoul of the prohibition against using extrinsic evidence to expand the meaning of a term used in a reference relied upon as anticipating the claimed subject matter. See In re Baxter Tranenol Labs, 21 USPQ2d 1281 (Fed. Cir. 1991). See also MPEP 2131.01.

In sum, the Examiner's Answer only underscores the patentability of Appellants' invention as claimed. The only way to sustain the rejection of claims 1, 3-5 and 8, is to ignore intrinsic evidence with respect to the meaning of the terms "mechanically fixed" and "contiguous". The only way to sustain the rejection of claims 9 and 10 is to combine references in a way which is not

suggested by any of the references and which would utterly defeat the teaching of the primary references Takahashi, Pavlovic.

The claims being clearly patentable over the art of record, reversal of the rejections and early allowance are solicited.

Respectfully submitted,
COHEN, PONTANI, LIEBERMAN & PAVANE

By

A handwritten signature in cursive script, appearing to read "Edward M. Weisz", written over a horizontal line.

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